DOCUMENT RESUME

ED 057 381 CG 006 756

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TITLE An Experimental Test of the Contingency Model of Leadership Effectiveness.
PUB DATE [71]
NOTE 16p.

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Group Relations; Leadership Qualities; *Leadership Styles; Motivation; Power Structure; *Productivity; *Situational Tests; Sociometric Techniques; *Task Performance
IDENTIFIERS Contingency Model

ABSTRACT

The present experiment provided a test of Fiedler's (1967) Contingency Model of Leadership Effectiveness, i.e., the relationship of leader style to group effectiveness is mediated by situational demands. Thirty-two 4 man task groups composed of military academy cadets were run in the experiment. In accordance with the Contingency Model, leaders were selected and assigned to groups on the basis of a measure of leadership style. Groups were assigned to one of 8 task situations specified by the manipulation of the variables of leader acceptance, task structure, and leader power. Measures were made of group task productivity, group atmosphere, and leader behavior. Results on measures of group productivity give extremely strong support for the validity of the Contingency Model. Measures of leader behavior help to illuminate the processes which result in the differential effectiveness of varying leadership styles across situations. (Author)

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An Experimental Test of the Contingency Model of Leadership Effectiveness

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The most widely accepted theory of leadership effectiveness has been proposed in Fiedler's (1967) Contingency Model of leadership effectiveness. Fiedler asserts that the relationship of leader style to group effectiveness is mediated by situational demands. He maintains that the leaders' opportunity to influence or control the group's activities, or in Fiedler's terms, the situational favorableness, determines the style of leadership which will be most effective. The specification of situational favorableness is based on three variables which, in order of importance, are members' respect and liking for the leader, task structure, and leader's position power. The Contingency Model dichotomizes each of these variables to yield eight possible situations ranging from highly favorable to highly unfavorable for the leader.

The leader's orientation to group task situations is assessed by 17 to 20 item bi-polar adjective scale which asks the individual to think of all the individuals with whom he has ever worked and to rate the one person with whom he could work least well. The score of the "esteem of the least preferred co-worker" (LPC) scale is interpreted to reflect a relative motivation towards task versus interpersonal success in group situations. Leaders who rate their least preferred co-worker quite low (Low LPC) are considered to be relatively task-oriented, while leaders who rate their least preferred co-worker relatively favorably (High LPC) are considered to be primarily consideration or interpersonally oriented. In Figure 1 the relationship of LPC to group effectiveness across the eight conditions of

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situational favorableness is shown. This empirically derived curve based

Insert Figure 1 about here

on almost fifty experiments occurring prior to 1967 indicates that task-oriented leaders perform relatively more effectively in either very favorable or very unfavorable situations while High LPC leaders have more effective groups in conditions of intermediate favorableness.

Considerable research both in and out of Fiedler's laboratory has supported the Contingency Model (Hunt, 1967; Hill, 1969; O'Brien, Fiedler, Hewett, 1970). However, in a recent article, Graen and his associates (Graen, Alvares, Orris, & Martella, 1970) concluded that the Contingency Model was without substantial predictive validity. The authors base their conclusions on the fact that while the Model is derived from extensive empirical data, investigation since its formal exposition (Fiedler, 1967) have not strongly supported theoretical predictions. Graen et al. cite several studies to support their position, but place the greatest weight on two of their own experiments which yielded negative results with respect to the Contingency Model. The authors stress that these experiments follow the procedures developed by Fiedler, but fail to give the same results, that is, resultant correlations of LPC and group productivity across octants show no consistent or significant patterns.

In a reply to Graen et al., Fiedler (1970) addressed himself to a discussion of the methodology involved in these experiments. Most strongly challenged as inadequate were the manipulations of the variables involved in determining situational favorableness. Fiedler contended that the tasks were inadequately differentiated with respect to structure, the

leader's position power was extremely weak, and the specification of leader-member relations varied widely across conditions.

The present experiment was an attempt to replicate the full eight cell design of the Contingency Model with manipulations and controls careful enough to provide an adequate test of the validity of the Model. The manipulations of the favorableness dimension involve a sociometric specification of leader-member relations, a strong and clear differentiation between structured and unstructured tasks, and a manipulation of power involving actual reward and punishment control. These manipulations, as well as the careful preselection of leaders, were expected to provide the strongest test of the Contingency Model to date.

Method

Subjects. Thirty-two four-man groups composed of cadets at a United States Military Academy were used in this study. In order to select the 128 men, two cadet companies were pre-tested two weeks before the actual running of the experiment. The pre-tests consisted of the Least Preferred Co-Worker (LPC) scale (Fiedler, 1967) and a sociometric test.

LPC. High and Low LPC leaders were chosen from one standard deviation above and below the mean of the distribution of all scores of cadets in both companies.

Leader-member relations. The sociometric pre-test asked the cadets to list the three members of their company whom they considered good friends and easy to work with and three men whom they liked least well and considered hardest to work with. The former ratings were used to assign men to groups in the cells with good leader-member relations and the latter ratings were used to assign members in the poor relations conditions.

Task structure. Each group was required to work on two tasks. The structured task consisted of drawing plans for a barracks building and barracks area. The specifications for these drawings were given in a special metric system. The group was required to convert the metric units into inches and then from inches into scaled inches for the drawing. Charts were provided for each conversion. Optimal group functioning required division of task duties, close supervision, and high speed calculations and drawing. The 20 minutes allotted time for the task was not sufficient for any group to complete the task. The score for the task was the total number of correct lines completed.

The unstructured task was a discussion task which required each group to outline a plan for a program to: stimulate over-seas-based enlisted men's interest in world politics; provide a means for educating them in this area; and maintain their interest throughout their tour of duty. The time limit for this task was 20 minutes. Productivity was assessed on the basis of the mean ratings of seven trained judges, who assessed each task product on ten-point scales of practicality, completeness, and degree of organization.

Position Power. Position power of the leader was manipulated by the experimental instructions. The high position power leaders and their groups were told that it would be the leader's responsibility to evaluate and assign a grade to each of the group members based on their contribution to the group product. Furthermore, these groups were led to believe that the grades and evaluations would be included in the overall rating for their summer training. The low position power leaders and their groups were only told that their performance, including that of the leader, would be evaluated by the experimenter.

The manipulations described above yielded the eight cell Contingency Model designation of situational favorableness shown in Figure 1. Four High LPC led groups and four Low LPC led groups were assigned to each condition with each group repeated over tasks.

Post-Experimental Measures. Following each task session, leader and group members filled out two short scales. The first of these was a 12 item Semantic Differential scale measuring the group atmosphere during the task. The second scale was a twelve item behavior scale on which the members described the leader's behavior during the preceding task session. Six items described relationship-oriented leadership behavior and six items measured task-oriented leadership behavior.

Results

Validation of the Leader-Member relations manipulation. The 16 leaders designated as having good leader-member relations and the 16 leaders designated as having poor leader-member relations on the basis of the sociometric assignment were compared on their scores for Group Atmosphere. The mean for the good relations groups was 83.71, while the mean for the poor relations groups was 71.63 ($t=2.99$, $p<.01$).

Task Productivity. The relationship between leadership style and group productivity across the eight conditions of situational favorableness was assessed by Spearman rho between the leaders' LPC and the task productivity (as assessed by mean ratings in the unstructured task and objective scores in the structured task situations). The rhos for cells 1 through 8 of the Contingency Model respectively were -.43, -.32, +.10, +.35, +.28, +.13, +.08, and -.33. These correlations by cell are plotted against the curve predicted by Fiedler's (1967) formulation, and the two curves are shown in

Figure 2. The correspondence between the two curves is striking. The

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Insert Figure 2 about here

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rank order correlation between the points predicted and obtained yields a rho of .84, $p<.01$.

Leader behavior. Member ratings of leader behavior of the two variables of relationship behavior and task behavior were analyzed by means of a 2 x 2 x 2 x 2 analysis of variance (LPC x Leader-Member relations x Task Structure x Leader Power, with repeated measures over Task Structure (Winer, 1962, pp. 337-344). Scores for each variables were based on the combined ratings of the three group members for the six eight-point scales. The range of possible scores on each scale for each variable was from 6 to 48. Since ratings were summed over the three group members the range of computed scores was from 18 to 144.

Relationship-oriented behavior. A main effect for LPC was found. The mean score on relationship behavior for High LPC leaders was 115.03 and for Low LPC leaders was 96.66, $F = 30.85$ $p<.001$. A main effect was also found for Task Structure. The mean leader relationship behavior score for unstructured tasks was 106.94 and for structured tasks was 104.75, $F = 5.98$, $p<.05$.

An interaction effect between LPC and Position Power was also noted, $F = 4.63$, $p<.05$. The interaction indicates that High LPC leaders in high power condition were rated as showing a greater level of relationship behavior ($\bar{x} = 117.19$) than were High LPC leaders in the low power conditions ($\bar{x} = 112.88$). Conversely, Low LPC leader in the high power condition were rated as showing less relationship behavior ($\bar{x} = 91.69$) than were Low LPC

in the Low Power conditions ($\bar{x}$ = 101.62).

Task structure also interacted with LPC to a significant degree, F = 9.46, p<.01. High LPC leaders were rated as displaying a greater amount of relationship behavior in the low structure condition ($\bar{x}$ = 117.50) than in the high structure condition ($\bar{x}$ = 112.56). Structure appeared to have no effect on the rated behavior of Low LPC leaders, with mean for high structure at 96.94 and for low structure at 96.38.

It is important to note that in all conditions the rated relationship behavior for High LPC leaders was higher than that for Low LPC leaders.

Task-oriented behavior. Again main effects for LPC and for Task Structure were found on this variable. The mean task behavior score for High LPC leaders was 100.75 and for Low LPC leaders was 112.91, F = 36.20, p<.001. Mean task behavior scores for all leaders on the structured task were significantly higher than for the unstructured task, 107.59 vs. 106.06, F = 5.63, p<.05, a two-way interaction between LPC and Task Structure, f = 5.18, p<.05. The interaction indicated that the rated task behavior of Low LPC leaders was unaffected by structure. For these leaders, the mean for high structure conditions was 112.94 and for low structure conditions, 112.87. However, a small but significant difference in the rated behavior of High LPC leaders was found with a mean of 102.25 in high structure conditions and 99.25 in low structure conditions.

A third order interaction involving LPC, Position Power, and Task Structure also reached significance, F = 8.73, p<.01. Figure 3 illustrates the nature of this interaction. It appears that for Low LPC leaders, Position Power had a greater effect on rated task behavior than did Task Structure, while for High LPC leaders both Power and Structure affected rated behavior.

Insert Figure 3 about here

Again, it should be noted that in all conditions Low LPC leaders were rated as engaging in more task-oriented behavior than were High LPC leaders. Thus, regardless of situational favorableness High LPC leaders were rated as displaying a significantly higher level of relationship behavior and a significantly lower level of task behavior than were Low LPC leaders.

Discussion

The findings of the present experiment give powerful support to the predictive validity of the Contingency Model of Leadership Effectiveness. The present study represents the first time that the full eight cell design of the Model has been tested with strong specification and control of all relevant variables. It also represents the first time that the leader-member relations aspect of situational favorableness was manipulated rather than measured post hoc by questionnaire. The striking correspondence of the curve obtained in the present experiment to the curve based on Fiedler's extensive research brings into considerable question the findings by Graen et al., (1970). The present authors can only conclude, along with Fiedler (1970), that the Graen et al. experiments, because of weaknesses in specification and manipulation of experimental variable do not comprise an adequate test of the Contingency Model.

Varying explanations for the success of High and Low LPC leaders under differing situational conditions have been hypothesized. Fiedler, himself, has recently changed his interpretation of the reasons for the relative effectiveness of different leadership styles. In past articles,

(Fiedler, 1967) he has hypothesized relatively invariant leader behavior styles with relatively higher levels of task behavior for Low LPC leaders and high levels of relationship behavior for High LPC leaders. Task effectiveness was thought to reflect a matching of appropriate behavior patterns to situational demands. However, recently, Fiedler, (1970), citing several studies which indicate that leaders may change their behavior across situations (Fiedler, 1966; Hawley, 1959; Sample and Wilson, 1965), has hypothesized that leaders may have both primary and secondary motivational goals in group situations. Conditions which are quite favorable for the leader may allow leaders to display behaviors related to their secondary drives, while more difficult situations call out primary goals and related behaviors. Fiedler maintains that effective leaders in all conditions may be displaying a relatively greater degree of relationship and interpersonally oriented behavior.

Findings in the present experiment lend support for the earlier formulation. The interactions involving LPC, Task Structure and Position Power indicate that Low LPC leaders tend to be somewhat responsive, in terms of rated task and social behavior, to varying power conditions, and that High LPC leaders appear to be influenced by both power and task structure differences. However, these interactions in no way vitiate the more striking finding that Low LPC leaders were rated as showing more overall task-oriented behavior than High LPC leaders, and that High LPC leaders displayed more relationship oriented behavior than Low LPC leaders. However, strong conclusions about leader behavior cannot be made completely upon member ratings of leader behavior. Objective process analysis of

leader behavior is needed to more fully elucidate the relationship of leader orientation to leader behavior under varying situational conditions.

In conclusion, the present experiment lends considerable support for the predictive validity of the Contingency Model, but does not fully clarify the reasons for the relative effectiveness of High and Low LPC leaders.

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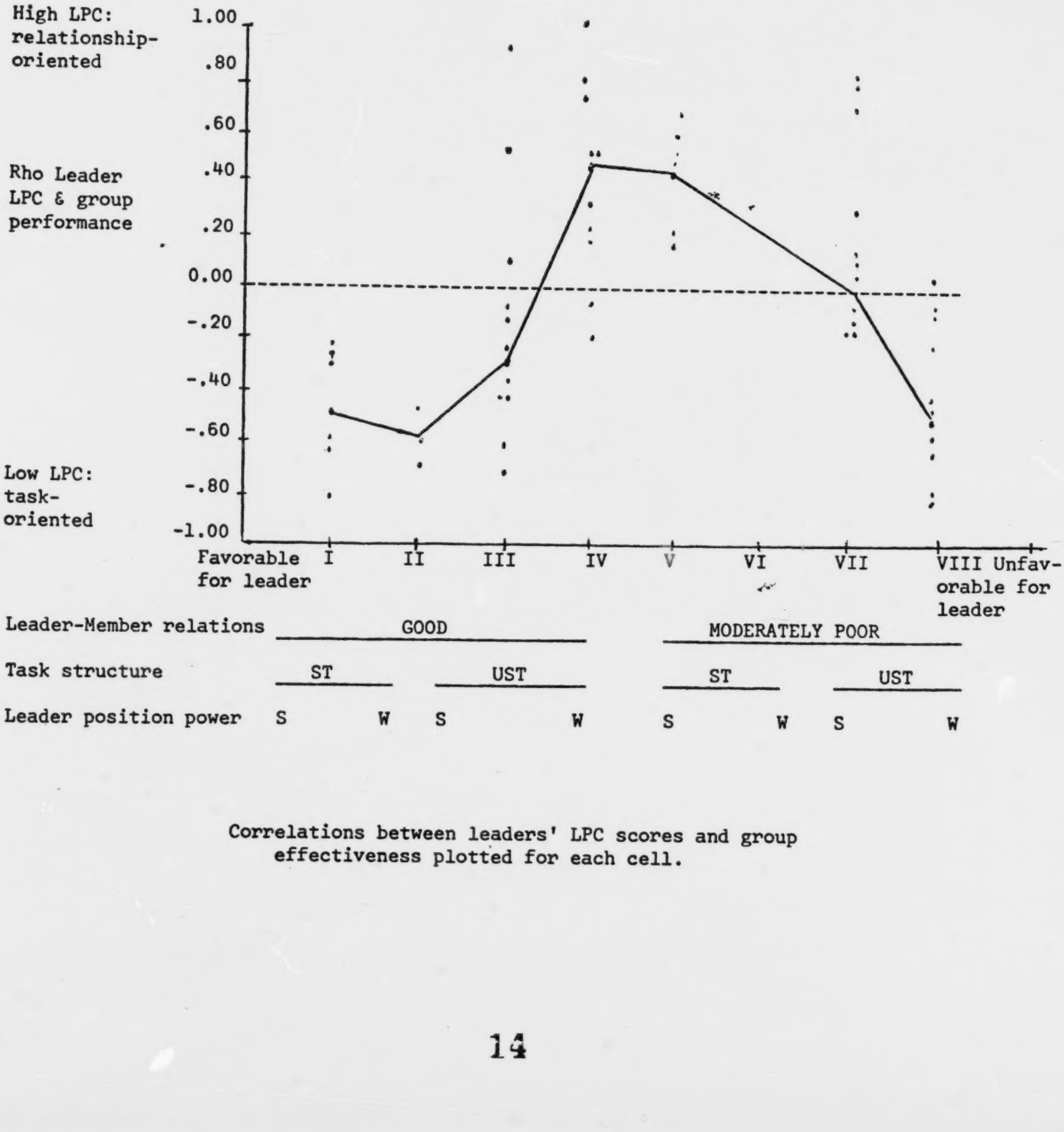
List of Figure Captions

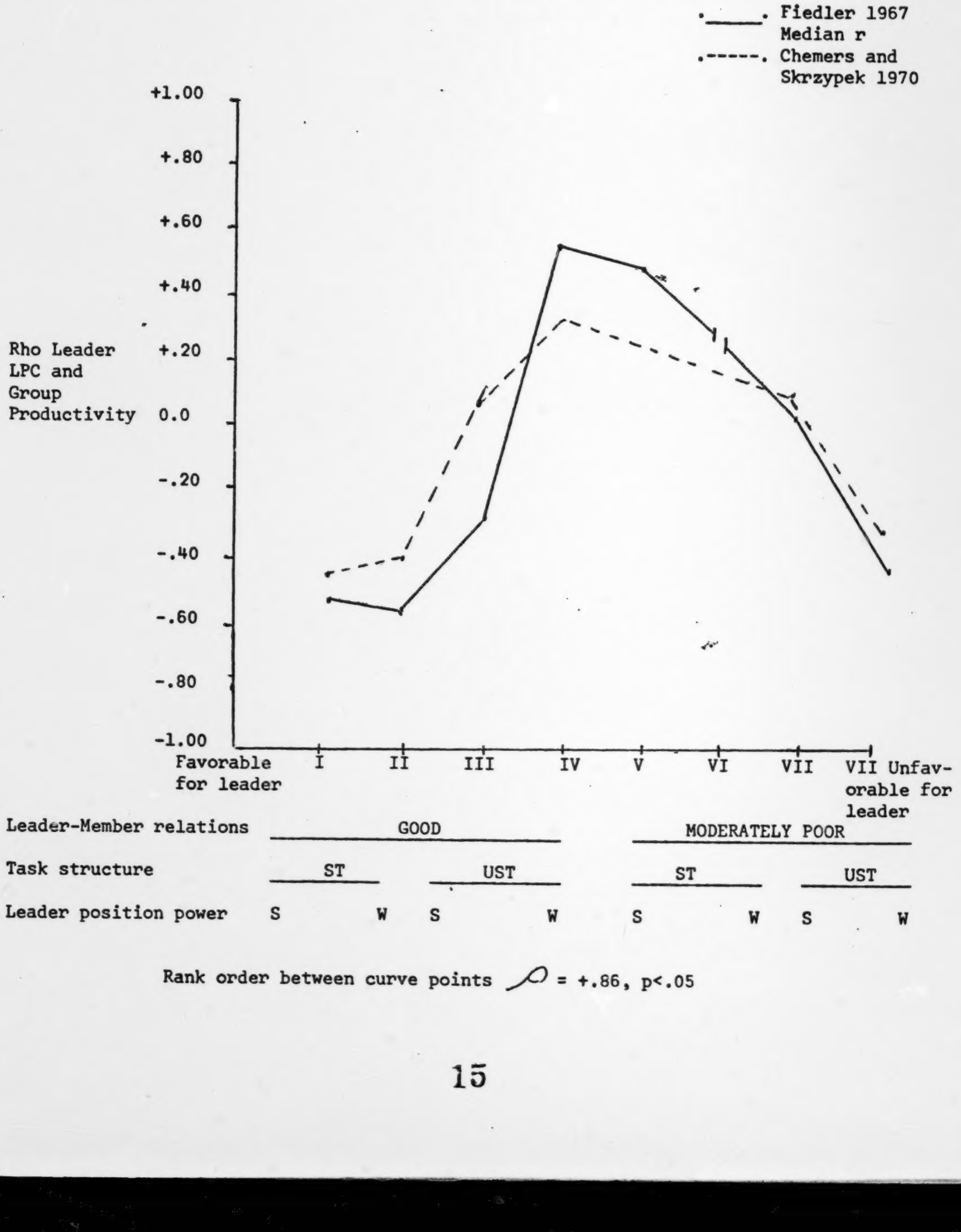
1. Correlations between leaders' LPC scores and group effectiveness plotted for each cell. (from Fiedler [1967])
2. Comparison of predicted and obtained curves for LPC and group Effectiveness.
3. Interaction of LPC, Task Structure, and Position Power on Member Ratings or Leader Task Behavior.

FIGURE 1



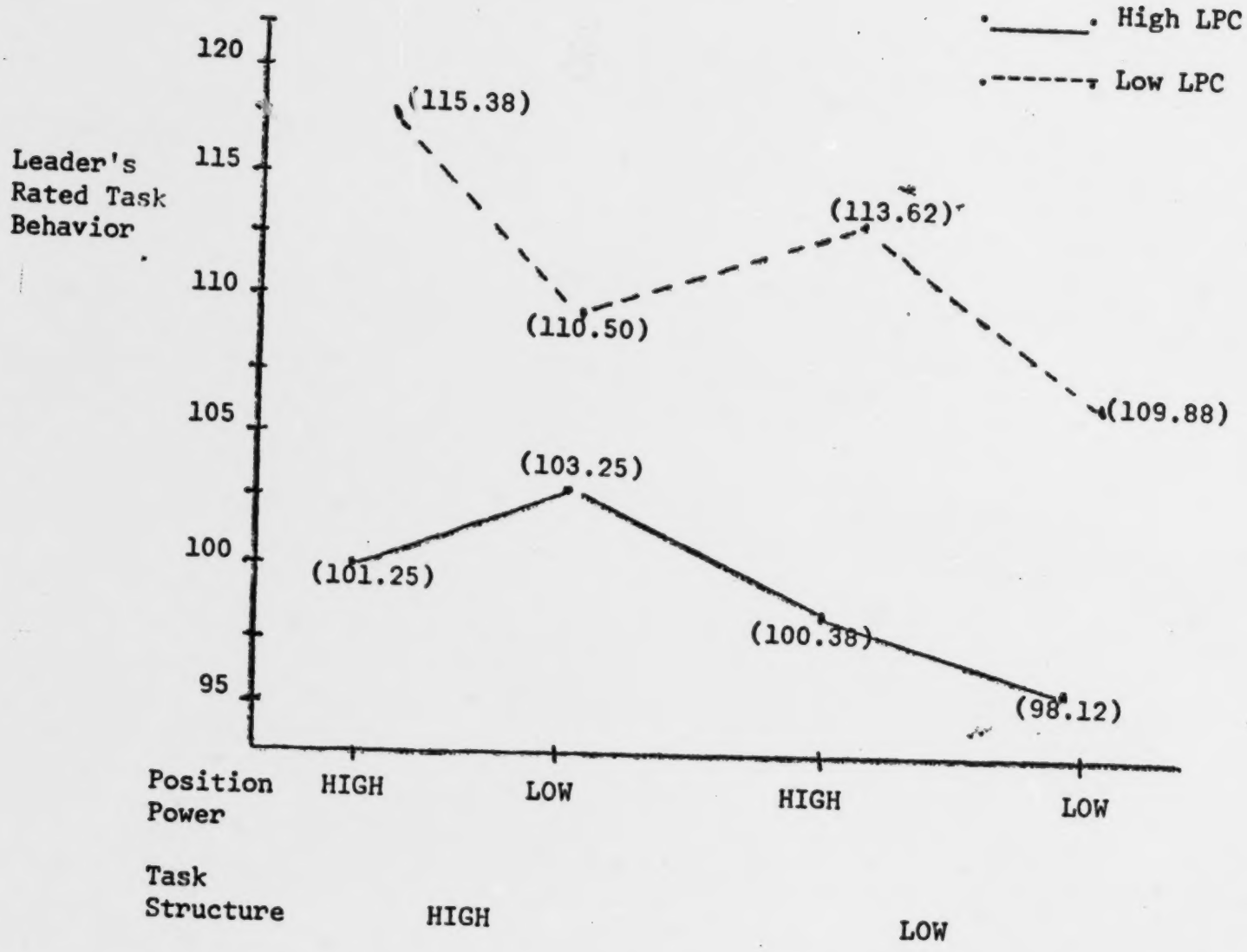
Correlations between leaders' LPC scores and group effectiveness plotted for each cell.

FIGURE 2



Rank order between curve points ρ = +.86, $p < .05$

FIGURE 3


High LPC
Low LPC
Leader's Rated Task Behavior
120
115
110
105
100
95
(115.38)
(110.50)
(113.62)
(109.88)
(103.25)
(101.25)
(100.38)
(98.12)
Position Power
HIGH
LOW
HIGH
LOW
Task Structure
HIGH
LOW